WHAT IS CLAIMED IS:

1. A transmission circuit comprising:

modulated signal generating means for generating a modulated signal including a phase and an amplitude;

a modulated signal line for transmitting the modulated signal, the modulated signal line being connected to the modulated signal generating means;

amplitude modulated voltage generating means for generating an amplitude modulated voltage in accordance with the amplitude of the modulated signal generated by the modulated signal generating means, the amplitude modulated voltage generating means being connected to the modulated signal line;

an amplitude modulated voltage line for transmitting the amplitude modulated voltage, the amplitude modulated voltage line being connected to the amplitude modulated voltage generating means; and

amplitude bandwidth limiting means for attenuating the amplitude modulated voltage output from the amplitude modulated voltage generating means by using a damping property represented by an exponential function in which an argument is exponentially proportional to a frequency, the amplitude bandwidth limiting means being interposed in the amplitude modulated voltage line.

2. The transmission circuit of claim 1, wherein in the amplitude bandwidth limiting means, the amplitude ratio of a voltage after passage to an input voltage is proportional to the value obtained by the following expression:

$$\exp\{-(1n2)/2(f/fc)^n\}$$

where $13/\{(16.6fc/fop)-24\} + 0.9 \leq n \leq \{(16.6fc/fop)-20.5\}^2/35 + 1.3$, f is the frequency (MHz), fc is the 3dB-attenuation frequency (MHz), and fop is the occupied bandwidth

(MHz) of the modulated signal.

3. The transmission circuit of claim 2, wherein n is two in the expression.

4. The transmission circuit of claim 1, further comprising power-supply-voltage generating means for generating a power supply voltage by DC conversion of the amplitude modulated voltage which has passed through the amplitude bandwidth limiting means, the power-supply-voltage generating means being interposed in the amplitude modulated voltage line.

5. The transmission circuit of claim 4, further comprising an RF power amplifier including an RF input terminal connected to the modulated signal line and a power-supply-voltage terminal connected to the amplitude modulated voltage line.

6. The transmission circuit of claim 1, further comprising frequency converting means interposed in the modulated signal line at an earlier stage of the RF power amplifier.

7. The transmission circuit of claim 1, further comprising:

phase modulated signal generating means for generating a phase modulated signal in accordance with the phase of the modulated signal generated by the modulated signal generating means, the phase modulated signal generating means being connected to the modulated signal line; and

a phase modulated signal line for transmitting the phase modulated signal, the phase modulated signal line being connected to the phase modulated generating means.

8. The transmission circuit of claim 7, further comprising phase bandwidth limiting means for attenuating the voltage of the phase modulated signal output from the phase modulated signal generating means by using a damping property represented by an exponential function in which an argument is exponentially proportional to a frequency, the amplitude bandwidth limiting means being interposed in the phase modulated signal line.

9. The transmission circuit of claim 8, wherein in the phase bandwidth limiting means, the amplitude ratio of a voltage after passage to an input voltage is proportional to the value obtained by the following expression:

$$\exp\{-(1n2)/2(f'/f'c)^m\}$$

where $0 \leq m \leq 3.5\exp[0.0615\{(16.6f'c/f'op)-30\}]$, f ' is the offset frequency (MHz), f 'c is the 3dB-attenuation frequency (MHz), and f 'oc is the occupied bandwidth (MHz) of the modulated signal.

10. The transmission circuit of claim 7, further comprising an RF power amplifier including an RF input terminal connected to the phase modulated signal line and a power-supply-voltage terminal connected to the amplitude modulated voltage line.

11. The transmission circuit of claim 7, further comprising frequency converting means interposed in the phase modulated signal line at an earlier stage of the RF power amplifier.

12. The transmission circuit of claim 8, wherein a cutoff frequency of the amplitude bandwidth limiting means is lower than a cutoff frequency of the phase

bandwidth limiting means.

13. A transmission circuit comprising:

modulated signal generating means for generating a modulated signal including a phase and an amplitude;

a modulated signal line for transmitting the modulated signal, the modulated signal line being connected to the modulated signal generating means;

amplitude modulated voltage generating means for generating an amplitude modulated voltage in accordance with the amplitude of the modulated signal generated by the modulated signal generating means, the amplitude modulated voltage generating means being connected to the modulated signal line;

an amplitude modulated voltage line for transmitting the amplitude modulated voltage, the amplitude modulated voltage line being connected to the amplitude modulated voltage generating means;

phase modulated signal generating means for generating a phase modulated signal in accordance with the phase of the modulated signal generated by the modulated signal generating means, the phase modulated signal generating means being connected to the modulated signal line;

a phase modulated signal line for transmitting the phase modulated signal, the phase modulated signal line being connected to the phase modulated signal generating means; and

phase bandwidth limiting means for attenuating the voltage of the phase modulated signal output from the phase modulated signal generating means by using a damping property represented by an exponential function in which an argument is exponentially proportional to a frequency, the phase bandwidth limiting means being interposed in the

phase modulated signal line.

14. The transmission circuit of claim 13, wherein in the phase bandwidth limiting means, the amplitude ratio of a voltage after passage to an input voltage is proportional to the value obtained by the following expression:

$$\exp\{-(1n2)/2(f'/f'c)^m\}$$

where $0 \leq m \leq 3.5\exp[0.0615\{(16.6f'c/f'op)-30\}]$, f ' is the offset frequency (MHz), f 'c is the 3dB-attenuation frequency (MHz), and f 'oc is the occupied bandwidth (MHz) of the modulated signal.

15. The transmission circuit of claim 13, further comprising an RF power amplifier including an RF input terminal connected to the phase modulated signal line and a power-supply-voltage terminal connected to the amplitude modulated voltage line.

16. The transmission circuit of claim 13, further comprising frequency converting means interposed in the phase modulated signal line at an earlier stage of the RF power amplifier.